Patent Claims

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- 1. Process for the quantitative optical analysis of fluorescently labelled biological cells (5) which are applied to a transparent support at the bottom (2) of a reaction vessel (1) in the form of a coherent cell layer and are in contact with a solution (3) containing the fluorescent dye (4), or of luminescent, biological cells in the form of a coherent cell layer situated on the transparent support, characterized in that the fluorescent dye (4) already present in addition to a masking dye (9) which absorbs the excitation light (6) for the fluorescent dye (4) and/or its emission light (7) is added to the solution (3) and/or in that a separating layer (10) which is permeable to the solution and which absorbs and/or reflects the excitation light (6) for the fluorescent dye (4) and/or its emission light (7) or, in the case of the luminescent cell layer, reflects the luminescent light, is applied to the cell layer.
- Process for the quantitative optical analysis of fluorescently or luminescently 2. labelled reaction components in a reaction vessel (1) filled with a solution (3) in which a fluorescent or luminescent ligand (13) is dissolved and the solution (3) is in contact with a receptor layer (12), which is specific for this ligand (13) and is applied to a transparent support at the bottom (2) of the reaction vessel (1) or deposited thereon, whose fluorescent or luminescent radiation (7, 15), which is characteristic of the receptor-ligand binding, is detected and analysed through the transparent bottom (2), characterized in that a masking dye (9) is added to the solution (3) and/or a separating layer (10) permeable to the solution (3) is applied to the receptor layer (12), the optical properties of the masking dye (9) and/or of the separating layer (10) being selected such that the excitation light (6) for the fluorescent dye (4) of the ligand (13) present in the solution (3) and/or its fluorescent light (8) or its luminescent light is absorbed by the solution (3) or the separating layer (10) or reflected at the separating laver (10).
 - 3. Process according to Claim 1 or 2, characterized in that the separating layer

- (10) used is a layer of polymeric latex beads.
- Process according to Claim 3, characterized in that the polymeric latex beads are dyed with a masking dye.
- Process according to Claim 1 2, characterized in that a masking dye is used
 which possesses good water solubility and has no cytotoxic side effects.
 - 6. Process according to Claim 1 2, characterized in that in the case of a replacement of the supernatant (3) containing a fluorescent dye (4) by a fluorescent dye-free solution (3a) a masking dye is added which suppresses the non-specific fluorescence emitted from the stained reaction vessel wall.